Work Task D5:	**Butler Lake, Imperial National Wildlife Refuge**
Partners:	U.S. Fish and Wildlife Service Bureau of Reclamation
Point of Contact:	Nathan Lenon, LC-2457 (702) 293-8015
Purpose:	Assessment of an existing backwater. The backwater has been identified as a potential location for a self-sustaining population of native fish. However, water quality is poor and may require substantial improvement. If successful, this project would provide 43 acres of habitat for razorback sucker and bonytail.
Conservation Measures:	Potential site for creation of habitat for the covered species.
Long Term Goal:	Identify and address the source of poor water quality in the backwater and explore management options that could ensure suitability of the backwater for native fish. These management options would also be applicable to other backwaters that may considered for inclusion in the LCR MSCP program
Location:	Imperial National Wildlife Refuge (NWR) in Arizona at River Mile 61.5.
FY 04 Obligation:	$6,673 for in-house preparation of the assessment.
FY04 Accomplishment:	Performed preliminary habitat assessment, researched possible approaches for habitat restoration. In October of 2004, a report *Butler Lake Native Fish Refugium, Preliminary Assessment* was completed and distributed to project stakeholders. This report described the lake's ecology, probable causes of its poor water quality, and several alternative approaches for restoring the lake.
Project Description:	Butler Lake, a 43-acre floodplain lake, is seepage-driven, with no known surface connection to the LCR, or any other body of water. The lack of freshwater flushing has caused the lake to become hypereutrophic (an advanced state of nutrient enrichment). Working jointly with Imperial NWR, Reclamation evaluated Butler Lake as a potential site for establishing a native fish refugium. This analysis consisted of a comprehensive limnological analysis, general surveys for fish and waterfowl, as well as a GIS-based bathymetry map. To date, more than one year of baseline monitoring has been completed, which is a minimal requirement in

the restoration of an isolated aquatic system. This data will provide: (1) a better understanding of what drives the aquatic system from an aquatic ecology perspective, and (2) a baseline from which to measure the success of any potential restoration activities.